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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/500,314	NICOLAI ET AL.
Office Action Summary	Examiner	Art Unit	
	DAVID P. RASHID	2624	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 June 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *6/28/2004*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06) **Office Action Summary** Part of Paper No./Mail Date 20080708

DETAILED ACTION

[1]   All of the examiner's suggestions presented hereinafter have been assumed for

examination purposes, unless otherwise noted.

Priority

[2]   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) (Application #

PCT/FR02/04580, filed June 28, 2004), which papers have been placed of record in the file.

[3]   MPEP §201.13 II G states

> An applicant may incorporate by reference the foreign priority application by including, in the U.S.
> application-as-filed, an explicit statement that such specifically enumerated foreign priority application or
> applications are "hereby incorporated by reference.

The statement must appear in the specification. *See* 37 CFR 1.57(b) and MPEP

§608.01(p). – it is suggested to incorporate by reference the foreign priority application by

including an explicit statement in the specification.

Amendments

[4]   This office action is responsive to the preliminary claim and specification amendment

received on June 28, 2004.

Drawings

[5]   The following is a quote from 37 CFR 1.84(u)(1):

> View numbers must be preceded by the abbreviation "FIG."

[6]   The drawings are objected to under 37 CFR 1.84(u)(1) because they fail to "precede[[d]]

[the view numbers] by the abbreviation 'FIG.' "

[7]   The following is a quote from 37 CFR 1.84(q):

> Lead lines are those lines between the reference characters and the details referred to. Such lines may be
> straight or curved and should be as short as possible. They must originate in the immediate proximity of
> the reference character and extend to the feature indicated.

[8]   Fig. 3 is objected to under 37 CFR 1.84(q) because it fails to "originate [lead lines] in the

immediate proximity of the reference character and extend to the feature indicated." *See e.g.,*

fig. 3, items 8, 12 (not including a lead line but a "free-standing" reference character).

[9]   The following is a quote from 37 CFR 1.83(a):

> The drawing in a nonprovisional application must show every feature of the invention specified in the
> claims. However, conventional features disclosed in the description and claims, where their detailed
> illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing
> in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box). In
> addition, tables and sequence listings that are included in the specification are, except for applications filed
> under 35 U.S.C. 371, not permitted to be included in the drawings.

[10]   Fig. 2 are objected to under 37 CFR 1.83(a) because it fails to show a plurality of

substance between items DBi and DB9 as described in the specification. It is suggested to add a

dashed line between items DBi and DB9 the same as the dashed line between items DB1 and

DBi. Any structural detail that is essential for a proper understanding of the disclosed invention

should be shown in the drawing. *See* MPEP § 608.02(d).

[11]   The following is a quote from 37 CFR 1.84(p)(5):

> Reference characters not mentioned in the description shall not appear in the drawings. Reference
> characters mentioned in the description must appear in the drawings.

[12]   Fig. 3 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it includes the

following reference characters not mentioned in the description: A21, A22, A28, A31, A37, and

A38.

[13]   Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement drawing

sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

Specification

[14]   The following guidelines illustrate the preferred layout for the specification of a utility

application. These guidelines are suggested for the applicant's use.

As provided in 37 CFR 1.77(b), the specification of a utility application should include

the following sections in order. Each of the lettered items should appear in upper case, without

underlining or bold type, as a section heading. If no text follows the section heading, the phrase

"Not Applicable" should follow the section heading:

> (a) TITLE OF THE INVENTION.
> (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
> (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
>   DEVELOPMENT.
> (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
> (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
>   COMPACT DISC.
> (f) BACKGROUND OF THE INVENTION.
>   (1) Field of the Invention.
>   (2) Description of Related Art including information disclosed under 37 CFR 1.97
>   and 1.98.
> (g) BRIEF SUMMARY OF THE INVENTION.
> (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
> (i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

[15]   The following is a quotation of 37 CFR 1.75(c):

> One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim which refers to more than one other claim ("multiple dependent claim") shall refer to such other claims in the alternative only. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. For fee calculation purposes under § 1.16, a multiple dependent claim will be considered to be that number of claims to which direct reference is made therein. For fee calculation purposes also, any claim depending from a multiple dependent claim will be considered to be that number of claims to which direct reference is made in that multiple dependent claim. In addition to the other filing fees, any original application which is filed with, or is amended to include, multiple dependent claims must have paid therein the fee set forth in § 1.16(j). Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of each of the particular claims in relation to which it is being considered.

[16]   **Claims 12-15** and **18-19** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

(i)   **Claim 12** cites that "the plurality of adders have a number that corresponds to a number of result block pixels...multiplied by a number of blocks of the pixelized image data..." (*emphasis added*). The use of the phrase "[to] have a number" is broad. Whether the numbers in question are complex, rational, irrational, integers, whole, etc., there must always exist "numbers" such that the above claim limitation is always true. A number corresponding to another number is also broad enough to allow the Examiner's interpretation (so long as those elements (*e.g.*, plurality of adders) exist, which already do from the independent claim).

(ii)   **Claim 13** contains a similar argument of claim 12 with respect to citing "corresponding in number to a number…".

(iii)   **Claim 14** cites "wherein a number of the accumulators is identical to a number of the adders" but regardless of how many accumulators and adders exist (so long that they exist), there will always exist two numbers between their quantity that will be equal. Suppose there are 5 accumulators and 23 adders. A number of accumulators that is identical to a number of adders would be 1, 2, 3, 4, and 5.

(iv)   **Claim 15** cites "wherein only certain output terminals of the accumulator provide the third values…" (*emphasis added*). However whether one, two, or all output terminals of the accumulator provide the third values, all possibilities are always "only certain output terminals."

(v)   **Claim 18** contains a similar argument of claim 12 with respect to citing "a number of input terminals…corresponds to a sub-sampling ratio…" The sub-sampling ratio and number of input terminals (so long as they both exist already as claim 12 already introduces) will always "correspond" to each other.

(vi)   **Claim 19** contains a similar argument of claim 12 with respect to citing "includes a number of lines corresponding to the number of blocks…multiplied by a number"

Claim Rejections - 35 USC § 112

[17]   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[18]   MPEP § 2143.02(I) reads in relevant part:

> If a claim is subject to more than one interpretation, at least one of which would render the claim unpatentable over the prior art, the examiner should reject the claim as indefinite under 35 U.S.C. 112, second paragraph (see MPEP § 706.03(d)) and should reject the claim over the prior art based on the

interpretation of the claim that renders the prior art applicable. *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984).

[19]   **Claims 1-10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(i)   **Claim 1-5** recites the limitation "the accumulated values" in claim 1, line 9. There is insufficient antecedent basis for this limitation in the claim.

(ii)   **Claim 5** cites "wherein the lines of the image memory are read successively <u>from a first one</u> for a number of lines corresponding to…" but the Examiner is unclear what exactly the "first one" is a first one from.

(iii)   **Claim 6** cites "a number of [an element such as] adders." However, the use of the word "number" is broad and includes the number zero "0".   "[A] number of [an element such as] adders" could be interpreted as a zero number of adders, or no adders as a zero number of adders is "a number of adders." This interpretation reduces claim 6 to read nothing more than the preamble ("[a] circuit for sub-sampling pixelized image data distributed in overlapping blocks") which is a "use" claim for claiming solely intended usage that may be rejected under 112 and 101. *See* MPEP s. 2173.05(r). Under the number zero, the Examiner can interpret the claim as nothing more than claiming "[a] circuit".

    Claims 7-10 are rejected by their dependency.

Claim Rejections - 35 USC § 102

[20]   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

    A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[21]   **Claims 1** and **5-20** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pub. No. 2001/0041012 (published Nov. 15, 2001, *hereinafter* "Hsieh et al.").

Regarding **claim 1**, *Hsieh et al.* discloses a method for sub-sampling (*e.g.* "chrominance sub-sampling" at ¶0038) pixelized image data ("image" at ¶0002) gathered in overlapping blocks (a digital image is comprised of "overlapping blocks"; *e.g.*, a 2 x 2 image has many overlapping blocks), comprising:

reading, line by line, (*e.g.*, 640 lines (and 320 lines comprising two columns into each item ADC) each line containing 480 active pixels in item S at fig. 1) from an image memory (fig. 1, item S) containing the pixelized image data;

accumulating (fig. 3, items ACC) as many lines (320 lines comprising two columns into each item ADC) as provided by a sub-sampling ratio ("[t]hese processors may accept parameters from the CPU for sub-sampling…" at ¶0022; "various modes of operation" at ¶0038; there must exist a sub-sampling ratio for the processor to sub-sample) in a vertical direction, using as many groups of accumulators as there are blocks (each block is 2 x 640, thus 320 accumulators for each block all determined from the horizontal image direction of item S, fig. 1) in a horizontal image direction and as many accumulators per group as provided by the sub-sampling ratio in

the horizontal direction (there are as many accumulators per group in the horizontal direction in

fig. 1); and

memorizing the accumulated values (values after fig. 3, items ACC) in as many result

memories (fig. 1, item LM) as there are accumulator groups (there exists memory LM broken up

into smaller memories in such a way that there are as many result memories in item LM as there

are accumulator groups; step carried out by items TSMM at fig. 1), each result memory

containing sub-sampled matrixes (the sub-sampled columns are matrixes) of a number of blocks

corresponding to a number of overlapping blocks in the vertical direction (there always exists

two numbers whatever the numbers may be such that the first number of blocks and the second

number of overlapping blocks in the vertical direction "correspond").

Regarding **claim 5**, *Hsieh et al.* discloses wherein the lines of the image memory (the

lines in the image item S at fig. 1) are read successively from a first one for a number of lines

corresponding to the sub-sampling ratio in the vertical direction ("[t]hese processors may accept

parameters from the CPU for sub-sampling..." at ¶0022; "various modes of operation" at ¶0038;

there must exist a sub-sampling ratio for the processor to sub-sample), after which a first

following line and a previously-used line are alternately read (every two columns are read in

each ADC as shown in fig. 1).

Regarding **claim 6**, *Hsieh et al.* discloses a circuit (the circuits in fig. 1) for sub-sampling

(*e.g.* "chrominance sub-sampling" at ¶0038) pixelized image data ("image" at ¶0002) distributed

in overlapping blocks (a digital image is comprised of "overlapping blocks"; *e.g.*, a 2 x 2 image

has many overlapping blocks), comprising:

a number of adders (the number zero "0"; *see* 35 USC § 112 rejection) corresponding to a

number of result block pixels in a first direction, multiplied by a number of blocks in a second

direction;

a number of accumulators (the number zero "0"; *see* 35 USC § 112 rejection) identical to

the number of adders; and

a number of result memories (the number zero "0"; *see* 35 USC § 112 rejection) of sub-

sampled values corresponding to the number of blocks in the first direction.

Regarding **claim 7**, *Hsieh et al.* discloses the circuit of claim 6, wherein the accumulators

are controllable for addition or subtraction of a current value to a previously-accumulated result

(*see* 35 USC § 112 rejection).

Regarding **claim 8**, *Hsieh et al.* discloses the circuit of claim 6, wherein a number of

inputs (the number zero "0"; *see* 35 USC § 112 rejection) of each adder corresponds to a sub-

sampling ratio in the first direction.

Regarding **claim 9**, *Hsieh et al.* discloses the circuit of claim 6, wherein said result

memories include a number of lines (the number zero "0"; *see* 35 USC § 112 rejection)

corresponding to the number of blocks (the number zero "0"; *see* 35 USC § 112 rejection) in the

second direction, multiplied by the number (the number zero "0"; *see* 35 USC § 112 rejection) of

pixels of the result blocks in the first direction.

Regarding **claim 10**, *Hsieh et al.* discloses the circuit of claim 6, wherein a number (the

number zero "0"; *see* 35 USC § 112 rejection) of bits of a result value stored in one of said result

memories is smaller than a number of bits of the values of the pixelized image data, a difference

between the two numbers of bits defining a division ratio for obtaining an average value of pixels
of each sub-sampled group.

Regarding **claim 11**, *Hsieh et al.* discloses an apparatus (fig. 1), comprising:

a first memory (fig. 1, item S) to store pixelized image data (image sensor item S stores
whether temporarily and permanent) arranged in overlapping blocks (a digital image is
comprised of "overlapping blocks"; *e.g.*, a 2 x 2 image has many overlapping blocks);

a plurality of adders (fig. 3, items ALU; "an adder...[is] implemented in the ALU1 . . .
320") coupled to the memory (item ADC connects to the first memory in fig. 3) and having input
terminals (input arrows into items ALU in fig. 3) to receive first values from the first memory
that correspond to the stored pixelized image data and to output second values (output arrow
from items ALU in fig. 3);

a plurality of accumulators (fig. 3, items ACC) respectively coupled to an output terminal
of the adders to obtain third values (third values are obtained; ¶0026) based at least in part on
second values output from their respective adders; and

at least one second memory (fig. 1, item LM) coupled to output terminals of the
accumulators to store the third values obtained by the accumulators as domain blocks having a
reduced size (fig. 1, items TSMM perform sub-sampling; ¶0041) relative to the overlapping
blocks.

Regarding **claim 12**, *Hsieh et al.* discloses the apparatus of claim 11 wherein the plurality
of adders have a number that corresponds to a number of result block pixels, of the stored
pixelized image data, in a first direction, multiplied by a number of blocks of the pixelized image
data in a second direction (failure to further limit; *see* claim objections).

Regarding **claim 13**, *Hsieh et al.* discloses the apparatus of claim 12, further comprising a plurality of additional second memories, the second memories corresponding in number to a number of blocks in the first direction (failure to further limit; *see* claim objections).

Regarding **claim 14**, *Hsieh et al.* discloses the apparatus of claim 11 wherein a number of the accumulators is identical to a number of the adders (failure to further limit; *see* claim objections).

Regarding **claim 15**, *Hsieh et al.* discloses the apparatus of claim 11 wherein only certain output terminals of the accumulators provide the third values to the second memory (failure to further limit; *see* claim objections).

Regarding **claim 16**, *Hsieh et al.* discloses the apparatus of claim 11 wherein the accumulators (fig. 3, items ACC) are coupled to receive, at one of their input terminals, the third values from their output terminals (*e.g.*, ACC1 at fig. 3 has an output and loops back into ALU1 to be fed back into ACC1; ¶0026).

Regarding **claim 17**, *Hsieh et al.* discloses the apparatus of claim 11 wherein the accumulators (fig. 3, items ACC) are controllable to add or subtract a current value (item ACC can feedback the current value into item ALU to add or subtract) from a previously obtained value (the value coming from item ALU at fig. 3).

Regarding **claim 18**, *Hsieh et al.* discloses the apparatus of claim 12 wherein a number of input terminals of each adder to receive the first values from the memory corresponds to a sub-sampling ratio in the first direction (failure to further limit; *see* claim objections).

Regarding **claim 19**, *Hsieh et al.* discloses the apparatus of claim 12 wherein the second memory includes a number of lines corresponding to the number of blocks in the second

direction, multiplied by a number of result block pixels (failure to further limit; *see* claim

objections).

Regarding **claim 20**, *Hsieh et al.* discloses the apparatus of claim 11 wherein the third

values (third values output from items LPA at fig. 1) stored in the second memory (fig. 1, item

LM) include sub-sampled matrices (the sub-sampled columns are matrixes) of a number of

blocks corresponding to a number of blocks of the pixelized image data in a certain direction

(regardless of how many blocks of the pixelized image data and blocks (so long that they exist),

there will always exist two numbers between their quantity will "correspond...in a certain

direction").

Claim Rejections - 35 USC § 103

[22]   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

[23]   **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Hsieh et al.* in

view of U.S. Patent No. 6,108,047 (issued Aug. 20, 2000, *hereinafter* "Chen").

Regarding **claim 2**, while *Hsieh et al.* discloses the method of claim 1, *Hsieh et al.* does

not disclose wherein the memorization is performed in an interlaced fashion.

Chen teaches wherein memorization is performed in an interlaced fashion (*e.g.*,

"interlace-scan formats" at 1:49-63).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made for the memorization of *Hsieh et al.* to be performed in an interlaced fashion as taught

by *Chen* "to provide improved technique for formatting video signals in much more efficient manner. In particular, it is desirable to scale the video input signal to certain output signal having certain spatial as well as temporal formats.", *Chen*, 1:38-44.

[24]   **Claima 3-4** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Hsieh et al.* in view of U.S. Patent No. 5,694,149 (issued Dec. 2, 1997, *hereinafter* "Cahill, III").

Regarding **claim 3**, while *Hsieh et al.* discloses the method of claim 1, *Hsieh et al.* does not disclose further comprising dividing the accumulated values by a product of the sub-sampling ratios in both directions, to obtain average values to be memorized as sub-samples.

Cahill, III teaches a method (fig. 12; "modes" 1-2 at 19:56) dividing accumulated values (fig. 12, item 1208; *e.g.*, "the accumulated total is reset after every four components and divider 1208 divides by four" at 19:50-54) by a product of the sub-sampling ratios in both directions ("based on the specified subsampling ratios" at 24:9-10), to obtain average values (fig. 12, item 1202) to be memorized as sub-samples.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of *Hsieh et al.* to include dividing the accumulated values by a product of the sub-sampling ratios in both directions, to obtain average values to be memorized as sub-samples as taught by *Cahill, III* "to provide a video system for the capture, compression, decompression, and display of video images in a personal computer environment that does not create and store complete scaled bitmaps to memory before displaying the scaled data.", *Cahill, III*, 3:9-14. *See also* 3:15-40.

Regarding **claim 4**, while *Hsieh et al.* in view of *Cahill, III* discloses the method of claim 3, *Hsieh et al.* in view of *Cahill, III* does not disclose wherein the division of an accumulated

value of several lines of the image memory to obtain an average value is obtained by only taking into account a number of most significant bits, smaller than a number of bits of a result value.

Cahill, III teaches wherein a division of an accumulated value of several lines of the image memory to obtain an average value (*see* claim 3) is obtained by only taking into account a number of most significant bits, smaller than a number of bits of a result value (10:30-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of *Hsieh et al.* in view of *Cahill, III* to include wherein the division of an accumulated value of several lines of the image memory to obtain an average value is obtained by only taking into account a number of most significant bits, smaller than a number of bits of a result value as taught by *Cahill, III* "to provide a video system for the capture, compression, decompression, and display of video images in a personal computer environment that does not create and store complete scaled bitmaps to memory before displaying the scaled data.", *Cahill, III*, 3:9-14. *See also* 3:15-40.

Conclusion

[25]   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4656516 A; US 5237432 A; US 5341142 A; US 5384912 A; US 5400051 A; US 5524075 A; US 5694148 A; US 5712799 A; US 5717394 A; US 5784046 A; US 5790714 A; US 6420979 B1.

[26]   Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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